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| EXAMINER | | | | |
| MISLEH, JUSTIN P | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/729,157

Applicant(s)

SILVERBROOK, KIA

Examiner

JUSTIN P. MISLEH

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-6 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-6 and 8-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/112,774.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed April 23, 2009 have been fully considered but they are not persuasive.

Request for Supervisory Review under MPEP §707.02

2. I, David L. Ometz, Supervisory Patent Examiner (SPE) of Group Art Unit 2622, which includes Primary Patent Examiner Justin P. Misleh, have reviewed the prosecution history of the present application and prior art applied in the Non-Final Office Action, mailed February 18, 2009, and have determined that the existing rejection is satisfactory and that this Office Action be made Final.

Dated: July 13, 2009

/David L. Ometz/
SPE, GAU 2622

Request for Examiner's Answer to Material Previously Traversed

3. As stated in item 2 of the Non-Final Office Action, mailed February 18, 2009, "Applicant's arguments with respect to Claims 1, 3-6 and 8-10 have been considered but are moot in view of the new grounds of rejection." The Examiner's reliance on a new grounds of rejection obviates the need to traverse arguments in response to the previous grounds of rejection.

35 USC §103(a)

4. Applicant states, “Applicant regrets that Applicant is not entirely clear on how the Examiner is relying on the cited references to reject claim 1.”

5. As extracted from the Non-Final Rejection mailed, February 18, 2009, Suzuki discloses the following, as required by Claim 1:

“A printhead assembly for a camera system having a chassis and a platen assembly that is mountable on the chassis, the platen assembly defining a printing path along which a print medium is passed, the print head assembly comprising:

an elongate ink reservoir assembly defining at least a **[plurality of ink reservoirs]** for storing ink, each of the at least **[plurality of ink reservoirs]** spanning a width of the printing path;

a guide assembly positioned in the elongate ink reservoir assembly, the guide assembly defining **[a plurality of discrete ink paths]** facilitating fluidic communication between each of **[the plurality of ink reservoirs]** and an outlet of the elongate ink reservoir assembly; and

at least one **[electrical component]** positioned at the outlet of the elongate ink reservoir assembly, the at least one **[electrical component]** substantially spanning a width of the printing path.”

6. The portions of Claim 1 that are bolded and bracketed represent differences between what is claimed and what is disclosed by Suzuki. For instance, the claim requires “a least three ink reservoirs,” whereas Suzuki discloses a plurality of ink reservoirs while not specifying at least three. In another instance, the claim requires “at least three discrete ink paths,” whereas Suzuki discloses a plurality of discrete ink paths while not specifying at least three.

7. Suzuki describes the printhead assembly in column 16 on lines 17 – 24 and on lines 43 – 48. In lines 17 – 24, Suzuki specifically states, “a full line type printhead having a length corresponding to the width of a maximum printing medium which can be printed by the printer, either the arrangement which satisfies the full-line length by combining a plurality of print heads as disclosed in the above specification or the arrangement as a single printhead obtained by forming print heads integrally can be used.” In lines 43 – 48, Suzuki specifically states, “aside from a printing mode using only a primary color such as black or the like, at least one of a multi-color mode using a plurality of different colors or a full-color mode achieved by color mixing can be implemented in the printer either by using an integrated printhead or by combining a plurality of print heads.”

8. These cited portion of Suzuki provide clear evidence that there is “an elongate ink reservoir assembly defining at least a plurality of ink reservoirs for storing ink, each of the at least plurality of ink reservoirs spanning a width of the printing path.” In summary, Suzuki discloses a printhead assembly with an integrated ink reservoir with a plurality of ink channels therein. However, it is noted that while Suzuki indeed discloses multiple ink channels, Suzuki does not specify the actual number of ink channels. Thus, at minimum, Suzuki discloses that the multi-color elongate ink reservoir assembly has at least two ink reservoirs, both of which span the printing path. Accordingly, Suzuki does not disclose “at least three ink reservoirs for storing ink.”

9. To overcome this deficiency, the Examiner introduced Yuen. Yuen is exclusively directed to a printhead/printer cartridge assembly that contains a plurality of ink reservoirs. To be specific, Yuen shows, in figure 3, an ink reservoir assembly (50) with three ink reservoirs (16,

18, and 20) contained therein, wherein each of the three ink reservoirs span the entire width of the ink reservoir assembly (50). Yuen's figures 1 and 3 show that the three ink reservoirs contained within the cartridge span from a left side of the cartridge to a right side of the cartridge.

10. Thus, if the print cartridge taught by Yuen were used in Suzuki's printhead assembly, the combined teachings yield Applicant's invention, as recited in Claim 1. In other words, Suzuki already teaches a printer cartridge that spans the width of the printing path, where that printer cartridge has a plurality of ink reservoirs. Yuen shows a printer cartridge with exactly three ink reservoirs that occupy the whole width of the printer cartridge. At the time the invention was made, the Examiner respectfully submits one with ordinary skill in the art would have combined the teaching of Yuen with Suzuki to form a printer cartridge/assembly that spans the width of the printing path and contain at three ink reservoirs. For these reasons, the Examiner maintains the rejection of the claims.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. **Claims 1, 3-6 and 8-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US 5,847,836) in view of Yuen (US 6,347,863 B1).

13. For **Claims 1 and 8**, Suzuki discloses, as shown in figures 1 and 2, a printhead assembly (P) for a camera system (1) having a chassis (not labeled; but clearly shown in figure 1) and a platen assembly (10, 68, 6, 18, etc.) that is mountable on the chassis (again clearly shown in figure 1), the platen assembly (10, 68, 6, 18, etc.) defining a printing path (The total direction “a→” until the end of the platen assembly and the total direction “←b” until the other end of the platen assembly is considered by the Examiner to be the claimed "printing path") along which a print medium (11) is passed, the print head assembly (P) comprising:

an elongate ink reservoir assembly (5) at least a *plurality of ink reservoirs* for storing ink (By using an “integrated printhead”, as indicated in Suzuki in column 16, lines 43-48, to provide a multi-color print mode; the ink reservoir assembly must be divided into at least two separate sections that each contain ink of a different color. Of course, each one of those different sections must be provided with an ink path that opens at the outlet. Thus, the printhead in Suzuki has plurality of ink reservoirs);

a guide assembly (not specifically shown; but necessary for proper operation) positioned in the elongate ink reservoir assembly (5), the guide assembly defining a *plurality of discrete ink paths* facilitating fluidic communication between each of *the plurality of ink reservoirs* and an outlet of the elongate ink reservoir assembly (Again see column, lines 43-48); and

at least one *electrical component* (the combined total of all “electrothermal transducer” in the ink reservoir assembly) positioned at the outlet (the total of all “discharge opening”/“discharge nozzles”) of the elongate ink reservoir assembly (5), the at least one *electrical component* (the combined total of all “electrothermal transducer” in the ink reservoir assembly) substantially spanning a width of the printing path (see column 16, lines 17-24).

Suzuki discloses a bubblejet type printhead (5) that spans the width of the recording medium (see column 16, lines 17-24). Suzuki specifically states, “as a full line type printhead having a length corresponding to the width of a maximum printing medium which can be printed by the printer, either the arrangement which satisfies the full-line length by combining a plurality of print heads as disclosed in the above specification or the arrangement as a single printhead obtained by forming print heads integrally can be used.”

Suzuki teaches, as stated in column 16, lines 17-24 and 43-48, that the printhead ink reservoir assembly may be a multi-color printhead that is comprised of a series of adjacent ink reservoirs, each with at least one ink channel and a plurality of corresponding discharge nozzles and discharge openings, or a single integrated ink reservoir with a plurality of ink channels therein each with corresponding discharge nozzles and openings. In either case, the bubble jet print heads require an electrical component, at the base of each ink channel, in the discharge nozzles to generate the ink bubbles. Suzuki doesn't specify the details of the electrical component, but incorporates the specific printhead technology by reference, via US Patent 4,558,333 (Sugitani et al.).

Sugitani et al. further specify, as shown in figure 11 and as stated in column 7 (lines 13 – 22), “Although not shown in the drawing, electrodes for input of signals are connected to these heating elements 302. As the connection method to be employed in this case, there may be utilized the multi-layer wiring method recently employed in semiconductor industries, in which electrically insulating films such as of SiO₂, Si₃N₄, polyimide, etc. and electroconductive films such as of Al, Au, etc. are arranged alternately by forming said electroconductive films according to photolithography to constitute a desired wiring pattern” (emphasis added by

Examiner). This constitutes the teaching of a printhead integrated circuit for each ink reservoir. Additionally, Sugitani et al. clearly show, in figures 9 – 11, where each ink reservoir includes at least three discrete ink paths (discharging orifices 207) and a corresponding set of at least three inlet apertures (discharging orifices 207), each of the inlet apertures (207) being aligned with a respective ink path. Thus, Suzuki and Sugitani et al. by incorporation disclose at least one printhead integrated circuit that is positioned in the outlet to span the printing path, as claimed.

In summary, Suzuki et al. specifically disclose a multi-color elongate ink reservoir (5) assembly having at least two ink reservoirs that spans the printing path; however, Suzuki et al. do not disclose wherein the elongate ink reservoir that includes “at least three ink reservoirs for storing ink, each of the at least three ink reservoirs spanning a wide of the printing path.”

On the other hand, Yuen also disclose an ink reservoir assembly with a plurality of ink reservoirs. More specifically, Yuen shows, in figure 3, an ink reservoir assembly (50) with three ink reservoirs (16, 18, and 20) contained therein, wherein each of the three ink reservoirs span the entire width of the ink reservoir assembly (50).

Hence, the Examiner submits, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have modified the elongate ink reservoir assembly of Suzuki with the ink reservoir assembly of Yuen so as to form an elongate ink reservoir assembly defining at least three ink reservoirs for storing ink, each of the at least three ink reservoirs spanning a width of the printing path for the advantage of providing an ink reservoir assembly that has an extended useful life (see Yuen, column 1, lines 17-20).

14. As for **Claim 2**, Yuen teaches, as shown in figure 3, in which the ink reservoir assembly defines three ink reservoirs (16, 18, and 20) and the guide assembly defines three discrete ink paths (side internal walls 58).

15. As for **Claim 3**, Suzuki discloses, as indicated above, that the printhead maybe single integrated multicolor ink reservoir assembly that is elongate to span the printing path where the printhead integrated circuits are mounted in the opening of the ink reservoir assembly.

Yuen further teaches, as shown in figure 3, the ink reservoir assembly including a base member (lower part of cartridge; e.g., 14 in figure 1) and a cover member (upper part of cartridge; e.g., 12 in figure 1), the cover member (12) having a roof wall, a pair of opposed side walls and a pair of spaced inner walls (clearly shown in figure 3), the side walls and the inner walls depending from the roof wall and being generally parallel to each other (see arrangement of side internal walls 58) and the base member having a floor and a pair of opposed end walls and defining an opening (clearly shown in figure 3), the guide assembly being interposed between lower ends of the inner walls and the floor (The Examiner considers the guide assembly to correspond to the side internal walls 58 residing in the base member, e.g., 14 in figure 1) again. Also, see figure 3).

The Examiner respectfully notes that Yuen, when combined with Suzuki (and Sugitani et al. by reference), would result in a printhead that is elongated to span the printing path. Furthermore, the guide assembly and each individual ink reservoir would additionally be elongated to span the printing path. Nevertheless, the side profile shown in Yuen's figure 3 would be similar to the side profile of the elongated printhead as a result of the combination.

16. As for **Claim 4**, Yuen clearly shows in figure 3, wherein in which the guide assembly includes a pair of guide walls (side internal walls 58 residing in the base member) that extend from respective lower ends (portion where cover member 12 and base member 14 join together) of the inner walls inwardly towards the elongate opening to define the three distinct ink paths that terminate at respective sets of inlet apertures of the printhead integrated circuits (The Examiner considers the fact that the guide walls extend from the lower end of the cover member 12 to the lower end of the base member 14 to correspond to the “inwardly towards the elongate opening”. The Examiner respectfully notes that the claim language does not specify that the guide walls must be non-parallel with respect to each other).

17. As for **Claim 5**, neither Suzuki nor Yuen specify the material or method of construction of the printhead ink reservoir assembly. While Yuen shows, in figure 3, a molded assembly; Yuen doesn't specify a plastics material.

However, the Examiner respectfully takes **Official Notice** (MPEP § 2144.03) that both the concepts and advantages of molding printhead cartridges out of a plastics material are well known and expected in the art. At the time the invention was made, it would have been obvious to one with ordinary skill in the art to have molded the printhead cartridges out of a plastics material for the sake of simplicity, cost, durability, and strength.

18. As for **Claim 6**, neither Suzuki, nor Sugitani et al., nor Yuen specify the material or method of construction of the printhead ink reservoir assembly. While Sugitani et al. show the particulars of the nozzles (inlet apertures); Sugitani et al. doesn't specify a number of air inlet openings that are treated to be hydrophobic to permit the ingress of air into the ink reservoirs as ink is fed from the ink reservoirs and to inhibit the egress of ink.

However, the Examiner respectfully takes **Official Notice** (MPEP § 2144.03) that both the concepts and advantages of incorporating a number of air inlet openings that are treated to be hydrophobic are well known and expected in the art. At the time the invention was made, it would have been obvious to one with ordinary skill in the art to have treated a number of air inlet openings that are treated to be hydrophobic for the sake of reducing corrosion and enhancing the ability to clean and maintain the printhead.

Applicant argues, “Applicant disagrees with that the claimed arrangement of hydrophobically treated air inlets is well known and expected ... Applicant respectfully requests documentary evidence in support of the above Official Notice.”

The Examiner respectfully submits Baldwin et al. (US 5,600,358) in support of the Official Notice. Baldwin et al. show, in figures 1 and 2, an ink reservoir assembly with an air inlet labyrinth (30) that is hydrophobically treated to prevent the leakage of ink (see Baldwin et al., Column 4, lines 32-48). For this reason, the Examiner will maintain the rejection.

19. As for **Claim 9**, Yuen discloses, as shown in figure 3, wherein the guide assembly includes a first guide wall (The Examiner notes figure 3 shows two guide walls, each labeled 58. The first guide wall is the left wall as looking at the figure and the second guide wall is the right wall as looking at the figure) extending from a first inner wall (The first inner wall is upper or top-most inner wall in the assembly), and a second guide wall (The Examiner notes figure 3 shows two guide walls, each labeled 58. The first guide wall is the left wall as looking at the figure and the second guide wall is the right wall as looking at the figure) extending from a second inner wall (The first inner wall is upper or top-most inner wall in the assembly), the first and second guide walls extending towards each other from the first and second inner walls

respectively and terminating at the elongate opening (Each guide walls extends between the elongate opening at the bottom-most portion of the assembly and the top-most portion of the assembly. In either case, the first guide wall may extend from top to bottom or vice versa and the second guide wall may extend from the bottom to top or vice versa. Nevertheless, each terminates at the elongate opening).

20. As for **Claim 10**, Yuen discloses, as shown in figure 3, wherein the guide assembly spans a width substantially the same as that of the elongate ink reservoir, and the guide assembly is provided longitudinally adjacent to the elongate ink reservoir assembly (see Examiner's explanation below).

As stated above, Yuen disclose an ink reservoir assembly with a plurality of ink reservoirs. More specifically, Yuen shows, in figure 3, an ink reservoir assembly with three ink reservoirs (16, 18, and 20) contained therein, wherein each of the three ink reservoirs span the entire width of the ink reservoir assembly (50). The combination of Suzuki and Yuen would yield wherein the guide assembly spans a width substantially the same as that of the elongate ink reservoir, and the guide assembly is provided longitudinally adjacent to the elongate ink reservoir assembly, as claimed.

Conclusion

21. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

22. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Justin P Misleh whose telephone number is 571.272.7313. The Examiner can normally be reached on Monday through Friday from 8:00 AM to 5:00 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, David Ometz can be reached on 571.272.7593. The fax phone number for the organization where this application or proceeding is assigned is 571.273.8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Justin P. Misleh/
Primary Examiner
Group Art Unit 2622
July 20, 2009